West Side Tunnel
On Going-to-the-Sun Road, approximately
twenty-four miles northeast of the
park entrance at West Glacier
Glacier National Park
Flathead County
Montana

HAER No. MT-76

WEST GLACIER

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MONT,
15-WEGLA,
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PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

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MONT,
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HISTORIC AMERICAN ENGINEERING RECORD

WEST SIDE TUNNEL
HAER MT-76

Location: On Going-to-the-Sun Road, approximately twenty-four miles northeast of the park entrance at West Glacier, Glacier National Park, Flathead County, Montana
UTM: Ahern Pass Quad. 12/295030/5403320

Date of Construction: 1926

Structural Type: Mountain tunnel through natural stone

Contractor: Williams & Douglas, Tacoma, Washington

Subcontractor: H.W. Bennett and Phil Segolia

Engineer: Bureau of Public Roads

Owner: Clacier National Park

Use: Vehicular mountain tunnel

Significance: The West Side Tunnel is one of approximately seventeen prominent masonry and concrete structures on Coing-to-the-Sun Road in Clacier National Park. The 51-mile stretch of scenic road is significant as a unique engineering accomplishment of the early twentieth century, and as the first product of a 1925 cooperative agreement between the National Park Service and the Bureau of Public Roads. The West Side Tunnel was part of the first contract following the landmark agreement. The tunnel is an excellent example of the care the engineers took in designing each structure for a given site, in that it has windows that look out on Heaven's Peak and the scenic McDonald Creek Valley.

Project Information: Documentation of the West Side Tunnel is part of the Going-to-the-Sun Road Recording Project, conducted during the summer of 1990 under the co-sponsorship of HABS/HAER and Clacier National Park. Researched and written by Kathryn Steen, HAER Historian, 1990. Edited and transmitted by Lola Bennett, HAER Historian, 1992.

Going-to-the-Sun Road

The West Side Tunnel is one of several notable structures located along Going-to-the-Sun Road, a scenic park road that winds through the spectacular mountains and valleys in the middle of Glacier National Park. The 51-mile road, built in sections between 1911 and 1933 and rebuilt for the next two decades, runs east and west through the park. Starting in the west, the road runs from West Glacier, along the 10-mile eastern shore of Lake McDonald and then up McDonald Creek for an additional ten miles. About one mile beyond the junction with Logan Creek, the road begins its ascent to Logan Pass. The road climbs at a 6-percent grade, passes through a tunnel, and turns at a major switchback called "The Loop." The road then follows the contours of the sides of Haystack Butte and Pollock Mountain, passing over several bridges, culverts and retaining walls before reaching Logan Pass. The road descends to the east along the sides of Piegan Mountain and Going-to-the-Sun Mountain before running along the north shore of St. Mary Lake. The road exits the park as it crosses Divide Creek near St. Mary.[1]

Significance of the Road

Going-to-the-Sun Road is significant as an outstanding engineering feat of the early twentieth century. In addition, the road was the first product of the interagency cooperative agreement between the National Park Service (NPS) and the Bureau of Public Roads (BPR). The agreement, signed in 1925, allowed the National Park Service to utilize the roadbuilding expertise of the Bureau of Public Roads while still retaining control to protect the landscape.[2]

West Side Tunnel

In 1925, Glacier National Park signed a $900,000 contract with the construction firm of D.A. Williams and A.R. Douglas of Tacoma, Washington, to build a twelve-mile section on the Going-to-the-Sun Road. The section ran from 1⅛ miles west of Logan Creek up to Logan Pass. The contractors worked on the road for four seasons and completed the project in October, 1928. There were several structures along Williams and Douglas' section of road, including the Logan Creek Bridge, the Granite Creek retaining wall and culvert, and the Haystack Creek culvert, in addition to the West Side Tunnel.[3]

Over the course of the four seasons, Williams and Douglas employed subcontractors on thirty different occasions. One of the subcontractors, H.W. Bennett and Phil Segolia, bored the West Side Tunnel in the fall of 1926. Since the tunnel site hindered access to the upper part of Williams and Douglas' section of road, the contractors created a tote road to carry supplies around the tunnel in 1925 and 1926. The tote road followed the Waterton Trail, which was located between MacDonald Creek and the proposed Going-to-the-Sun Road, to a point below the Loop. Williams and Douglas then moved their supplies up a newly created route from the Waterton Trail to the Loop. Even their power shovels made the steep ascent.[4]

By September, the resident BPR engineer had completed all the surveying

near the tunnel, and Bennett and Segolia established camp about 600 feet downhill (east) from the tunnel. Excavation began at the eastern portal and through October, the subcontractors kept twenty-four men working two shifts on the tunnel. Bennett and Segolia eventually used 6000 pounds of dynamite to move 3764 cubic yards of rock. Two compressors provided the compressed air for a jack hammer, and the laborers removed the loosened rock with hand carts that rolled on tracks in the tunnel. The subcontractor generally opened up a hole near the ceiling of the tunnel and then worked down to the floor level.[5]

At the end of October, Bennett and Segolia had progressed 50 feet into the east side of the tunnel. During the next few weeks, the subcontractor began working three shifts. Most of the work was complete when -32 degree weather in December shut operations down.[6]

The tunnel contained two large windows that faced Heaven's Peak and overlooked part of the McDonald Creek Valley. The windows added ventilation and light to the tunnel as well as allowing scenic views. Each window was as high as the tunnel ceiling and had a small porch or gallery framed by a masonry guardrail.[7]

The National Park Service's resident landscape architect was pleased with the appearance of the tunnel. Originally, there was no masonry used in the tunnel or portals except the gallery guardrail. The landscape architect thought this helped to keep the appearance "simple" and less obtrusive.[8]

During the winter of 1966-1967, Glacier National Park oversaw the placement of a reinforced concrete lining in the tunnel.[9]

Description

When the tunnel was originally constructed, it was 192' long, 20' wide, 18' high, and the ceiling curved on a 10 foot radius.[10] There are two large windows facing outward and each has a porch or gallery enclosed by a masonry guardrail. When the park installed the reinforced concrete lining, they enlarged the tunnel. There are a few cracks in the lining, some collection of calcium deposits, and a little spalling.

ENDNOTES

1. See the Historic American Engineering Record report HAER MT-67 on the Going-to-the-Sun Road.

2. G.H. Purcell, F.A. Kittredge, J.A. Elliott, T.G. Vint, and G.J. Kraebel, Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks, April 22, 1925 (Record Group 79, National Archives, Washington, D.C.)

3. W.G. Peters, "The Transmountain Highway, Glacier National Park," Western Construction News (August 10, 1929), pp. 395, 401.

4. "Logan Pass Highway in Glacier Park Will Be Opened in July," Great Falls Tribune (February 26, 1933); W.G. Peters, "Construction Progress Report (1925) on Transmountain Highway, Glacier National Park, West Side Project, Construction, East Side Project, Re-Location," (Record Group 79, National Archives).

5. Peters, Western Construction News, pp. 397-398; W.G. Peters, "Monthly Progress Report, October 1926" (Glacier National Park Library Historical Files).

6. Peters, Western Construction News, p. 398.

7. Peters, Western Construction News, p. 398.

8. Ernest A. Davidson, "Report to Chief of Division of Landscape Architecture Covering Features of Landscape Interest in Construction of Avalanche-Logan Pass Section of Transmountain Highway, Glacier National Park, 1925 to 1928," January 24, 1929 (Record Group 79, National Archives, Washington, D.G.)

9. "Annual Report of the Superintendent, Glacier National Park, 1966" (Glacier National Park Library Historical Files).

10. Peters, Western Construction News, p. 397.

BIBLIOGRAPHY

"Annual Report of the Superintendent, Glacier National Park, 1966" (Glacier National Park Library Historical Files).

Davidson, Ernest A. "Report to Chief of Division of Landscape Architecture Covering Features of Landscape Interest in Construction of Avalanche-Logan Pass Section of Transmountain Highway, Glacier National Park, 1925 to 1928." January 24, 1929 (Record Group 79, National Archives, Washington, D.C.)

Historic American Engineering Record. "HAER MT-67: Coing-to-the-Sun Road." (Library of Congress, Washington, D.C.)

"Logan Pass Highway in Glacier Park Will Be Opened in July," Great Falls Tribune, February 26, 1933.

Peters, W.G. "Construction Progress Report (1925) on Transmountain Highway, Glacier National Park, West Side Project, Construction, East Side Project, Re-Location" (Record Group 79, National Archives, Washington, D.C.)

Peters, W.C. "Monthly Progress Report, October 1926." (Glacier National Park Library Historical Files).

Peters, W.C. "The Transmountain Highway, Glacier National Park," Western Construction News, August 10, 1929, pp. 394-401.

Purcell, C.H., F.A. Kittredge, J.A. Elliott, T.C. Vint, and C.J. Kraebel. Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks, April 22, 1925 (Record Group 79, National Archives, Washington, D.C.)